



# **How to Give a Job Seminar and Why It's Not the Same as a Regular Scientific Presentation**

**William T. Schrader, Ph.D.**  
**Deputy Scientific Director**  
**National Institute of Environmental Health  
Sciences**  
**Research Triangle Park, NC 27709**

**[schrader@niehs.nih.gov](mailto:schrader@niehs.nih.gov)**

NIEHS Presentation WT Schrader 050803



# **THE OBJECT IS TO GET THE JOB OFFER**

**That requires a vectorial exchange  
of scientific information between  
YOU and the Audience**



# The Job Search Committee

---

- **Most of the search committee don't have a clue about your field**
  - Few know your boss
  - Few know your techniques
  - None know your jargon
- **They have defined criteria to meet**
  - What technology you will anchor
  - What project(s) you will serve on to start
  - What headcount you will inherit
  - What scientific resources you will need
  - Whose former lab space you are getting



# You Must Stand Out in the Crowd

---

- Are you just a worker in a big factory?
- What exactly did YOU do?
- Did you think up the ideas or just do what you were told?
- Did you collaborate?
- Did you ride everybody's coattails?
- Are you a good thinker?
- Can you discuss science interactively?



## Before You Go Presentation Skill

---

- **PRACTICE** your seminar, and not just in front of the lab
- It ought to be understandable to a reasonably-well-informed scientist, not just a specialist
- Practice your delivery
  - Tape record, or ask your friends to tell you if you say “uhhhh” all the time.
  - Practice with the pointer; don’t use it like a light saber.. It is very distracting!



# Before You Go Preparing the Slides

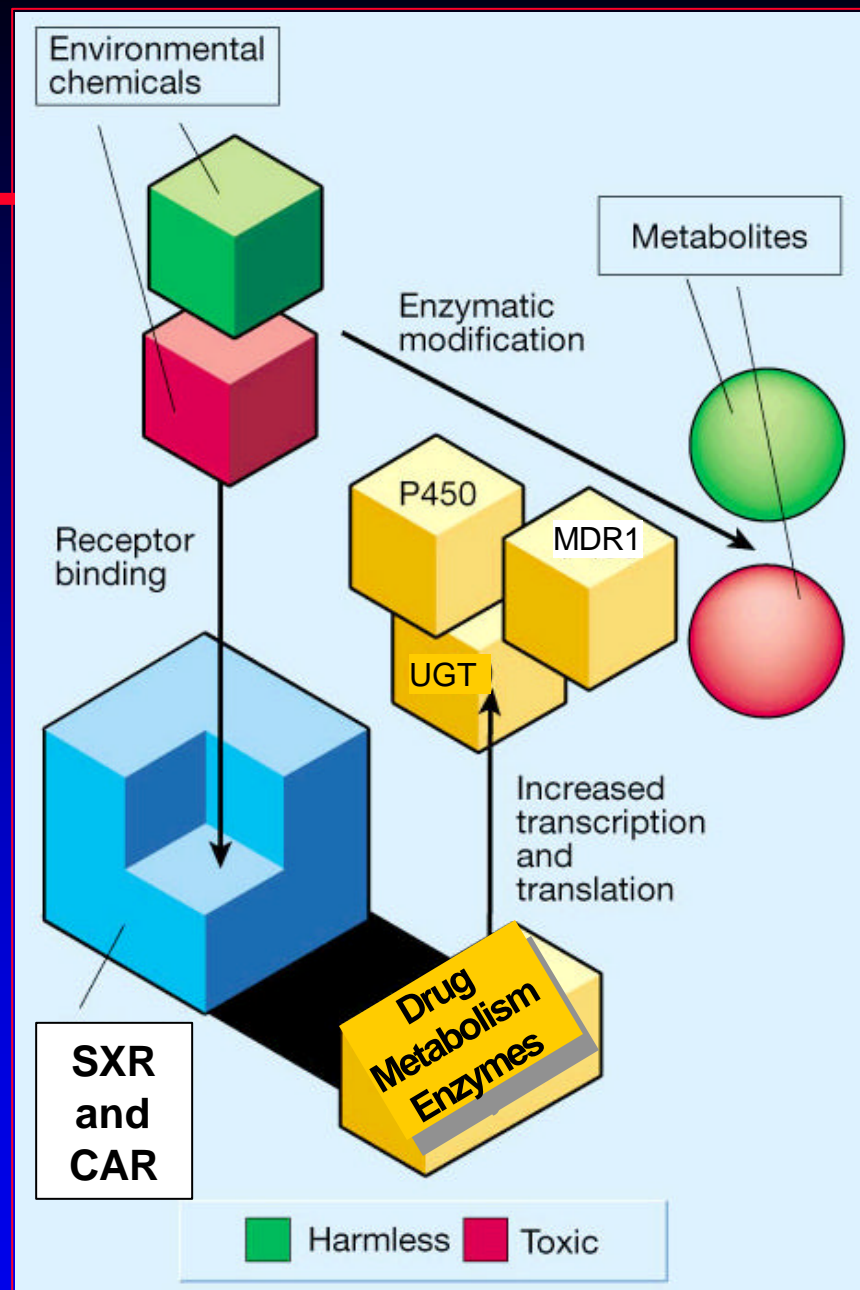
---

- **SIMPLIFY and LINEARIZE**
  - You are trying to educate them about your complex studies.
  - Cut and edit out panels of images, etc., to show **ONLY** the salient features needed to bring the listener to a solid conclusion.
  - Delete side issues
  - Any slide that you pass over in under 15 seconds is **OUT!**
- **Use procedural cartoons to describe methods**
  - Skip the tiny details, unless they are critical and you developed them.



# Overview of the Pathway Triggered by Xenobiotic Sensor Proteins

*From Lazar, M.A.  
Nature, 407, 852-853, 2000*





# **Before You Go Reviewing the Data You'll Present**

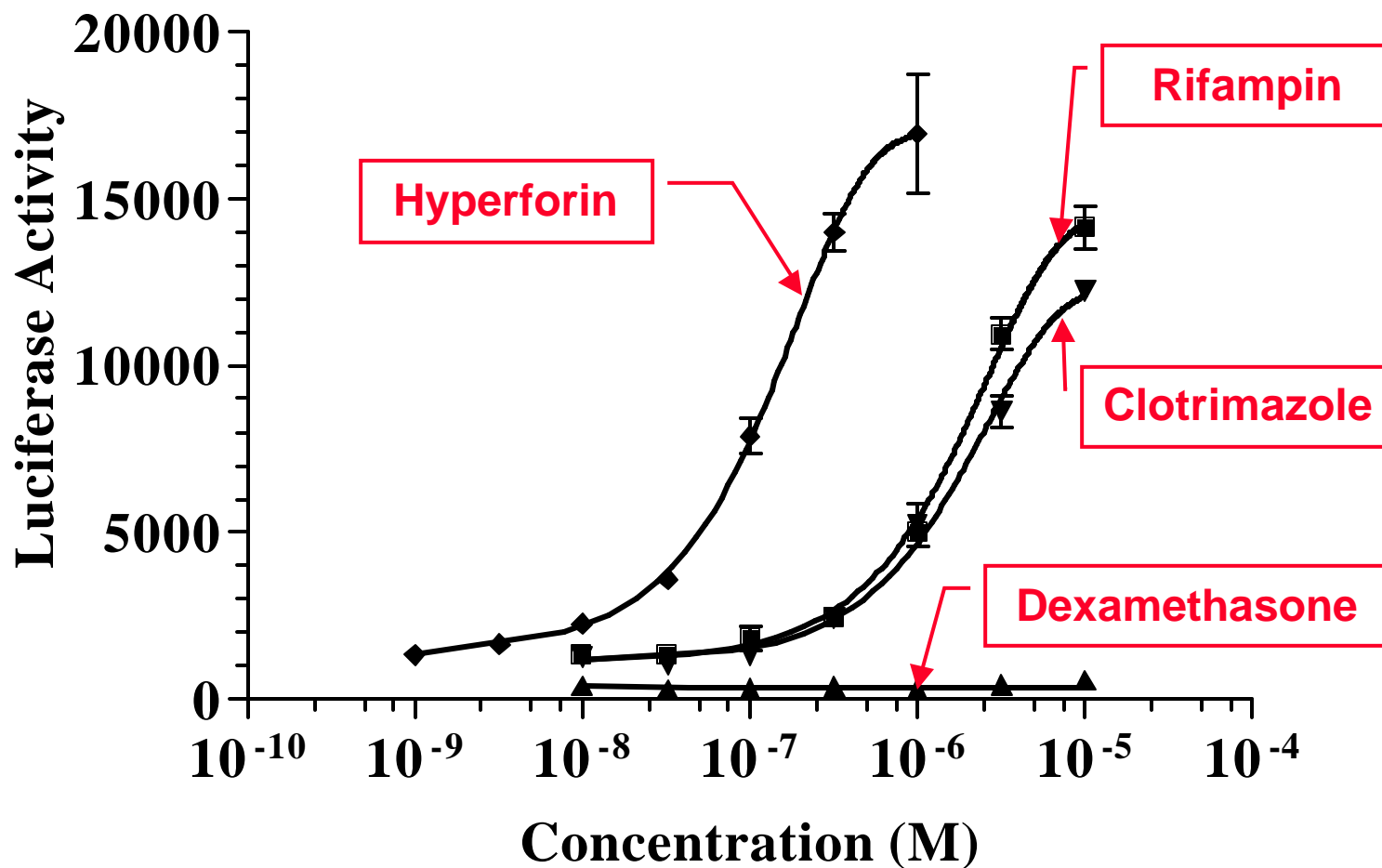
---

- **Don't try to convince the audience of something that is unsupported by the image in front of them, e.g.:**
  - **Overlapping SEM error bars mean NO SIGNIFICANT DIFFERENCE, not “slight effect”**
  - **Gel bands that are not different to the eye can't be explained away by “it doesn't show very well in this particular gel, but...”**
  - **Companies want to see dose-response curves and error bars, not bar charts**
- **Review the human disease context of your work and be prepared to discuss that aspect if it comes up**



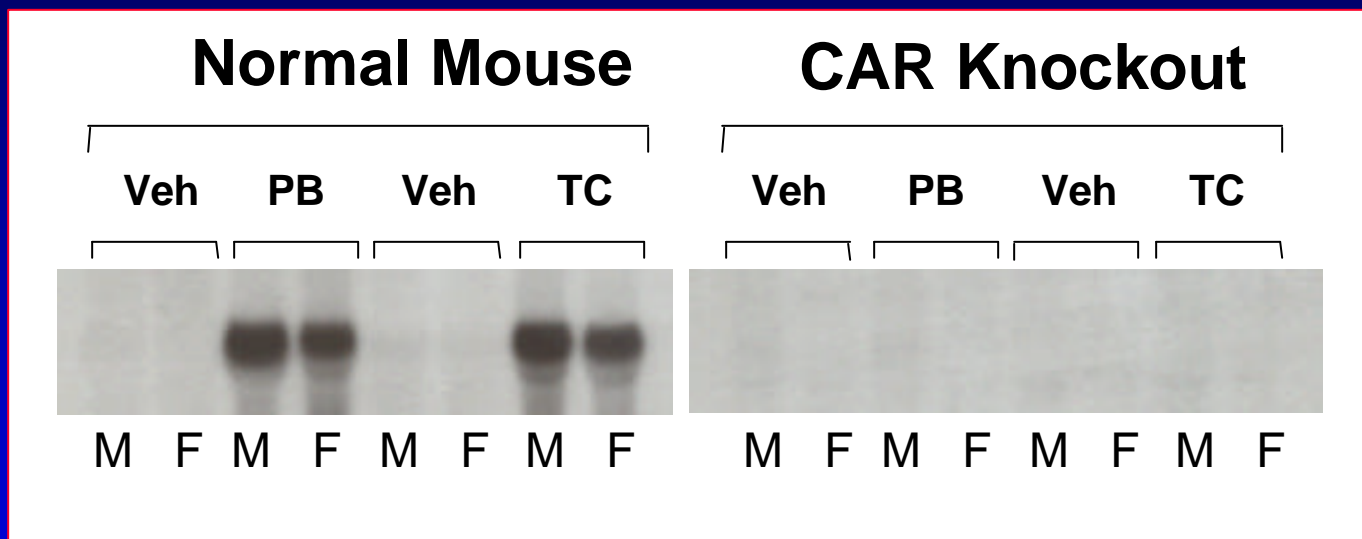


# Dose-response Curves of Reference Drugs Gal4-SXR Chimera Assay





# CAR is Essential for Induction of CYP2B10 Gene Expression



1 Day Treatment

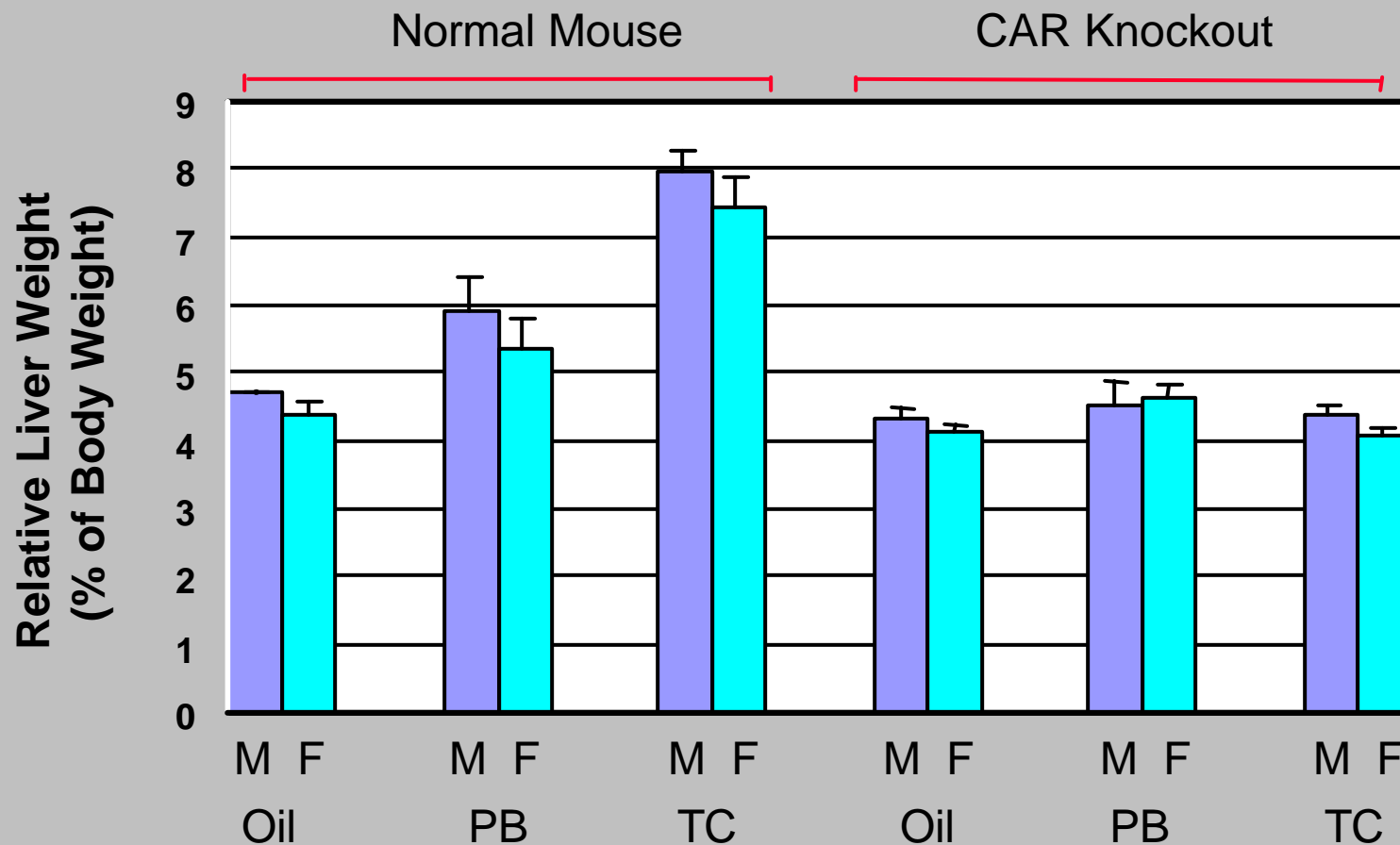
Veh: Vehicle Control

PB: Phenobarbital

TC: TCPOBOP



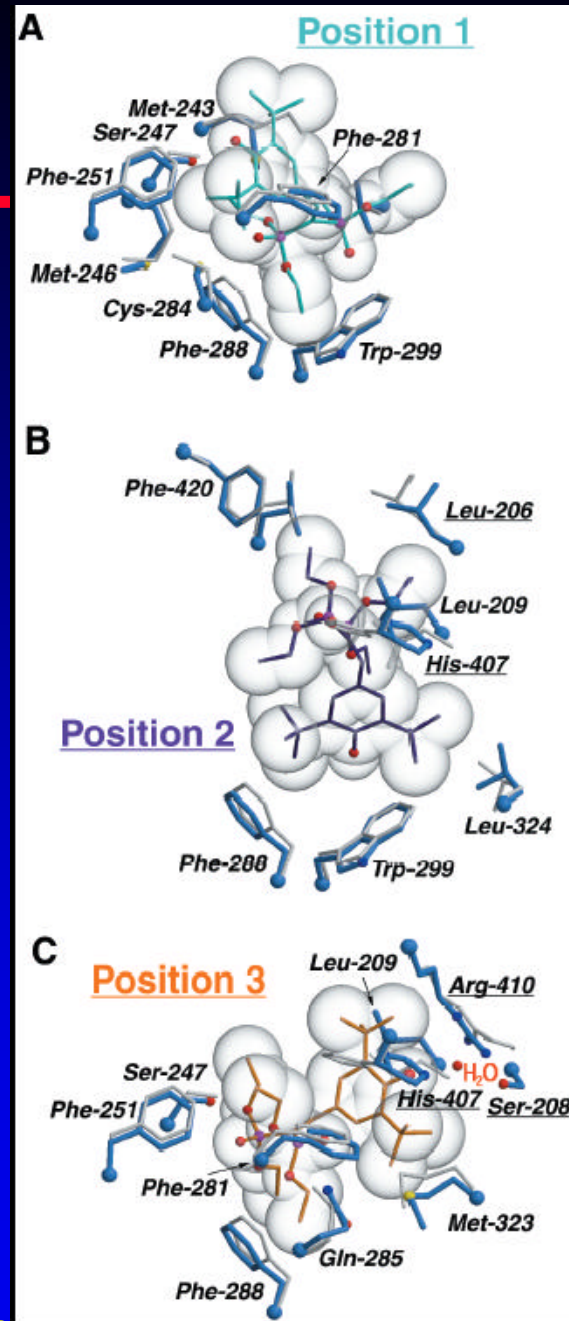
# CAR Mediates Liver Enlargement (Hepatomegaly)





# Three-Dimensional Structure of the PXR Ligand Pocket

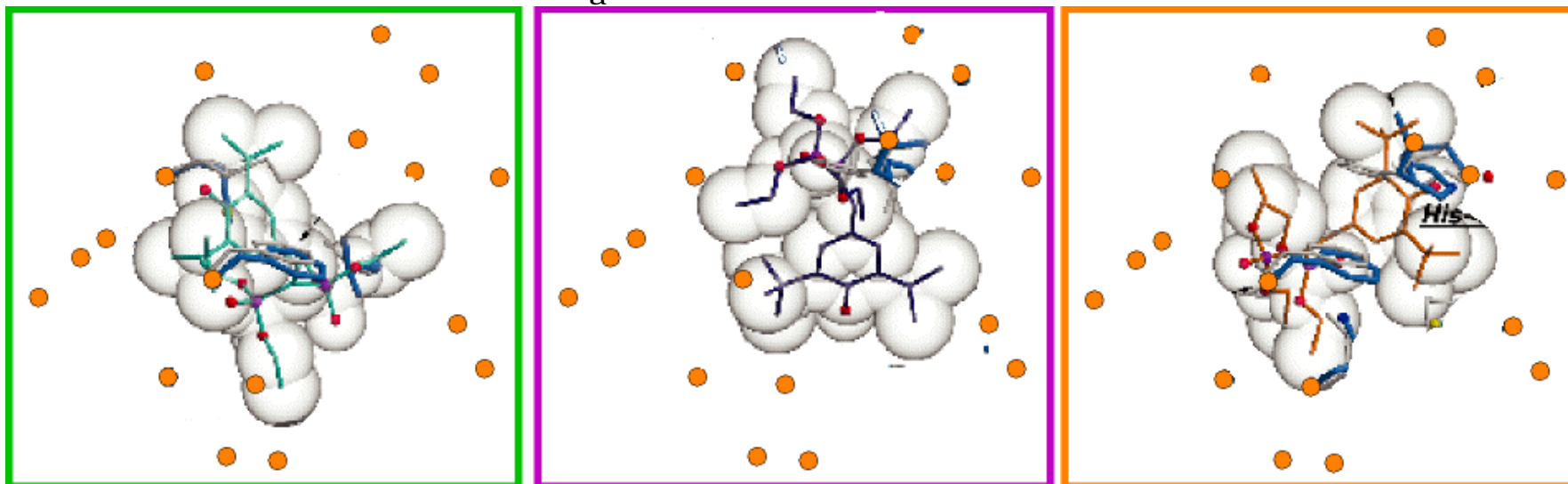
RE Watkins et al., Science 2001



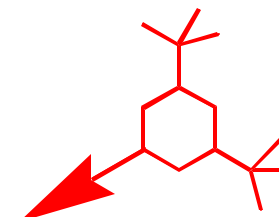
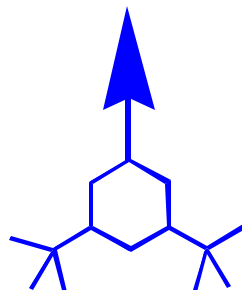
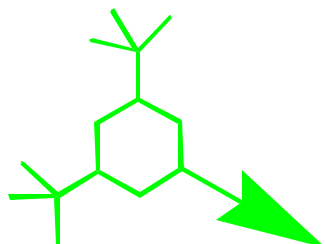


# Three Different Orientations of Activator SR12813 in the SXR Binding Pocket

● C<sub>a</sub> Atoms of Proximal Amino Acids



Cartoon of Ligand Orientation in Each Structure:



Adapted from Watkins et al., Science 2001

NIEHS Presentation WT Schrader 050803



## **Before You Go Checking for Antagonism**

---

- **Are any of the people you're going to see major players in your field?**
  - Don't give away any of the juicy lab secrets unless you and your boss are in agreement
  - Be sure to know in advance if they are likely to be in agreement with you or not
- **Do a quick check for late-breaking articles**
  - Someone will want to impress their own boss by asking you about an article that just appeared.



# The Job Seminar

## Overall Organization and Grammar\*

---

- **FIRST 10 MINUTES** (THIRD PERSON PLURAL: “They did this or that”)
  - History of the field, and where your boss’s lab fits into the story.
  - END WITH where the field stood when you joined the lab
- **MIDDLE 30 MINUTES** (FIRST PERSON SINGULAR: “I did this, I found that, I concluded xyz”)
  - What you and your boss decided you should work on
  - How you approached it, what you found
  - How you interpreted the data and where you went next
  - END WITH what we know now that you’re done
- **LAST 5 MINUTES** (FIRST PERSON PLURAL: “Our lab is planning to do xyz next, following up on my work”)

\* Use the ACTIVE VOICE, “we found” not “it was found that”



# Expectations During the Seminar

---

- **MAKE IT FINISH IN LESS THAN 50 MINUTES!**
  - Academics have to get back to something else
  - Company seminars often run over one hour
- **They will interrupt to ask pointed questions**
- **Don't give answers unless you are sure.**
  - Especially, they may ask questions about drugs or brand names.. Don't guess
  - Don't argue or tell them they're wrong. Stick to your guns, but say "that's a good point..."
  - If they suggest a good experiment, or ask if you've done something, give the answer if it's been done.
  - Don't try to snow them by saying that it has been done, because the next question will be "what were the results?"
- **You can't know everything**





# SO YOU WANT TO BE A PROFESSOR, EH?



# The Real World of Academics

You Get Ahead Based Upon Three Aspects of Your Job:

---

- **Research**
  - Distinctive area within the department
  - Grants
  - Publications
- **Teaching**
  - Graduate or undergraduate?
  - Medical curriculum
- **Service function**
  - Committees
  - Core Laboratory



# The Search Committee will be asking themselves “Can this person....”

---

- Compete in **science** in your chosen field
- Anchor a **key technology** and/or run a core facility
  - Gene transfer, knockout mouse, tissue culture
- **Teach** a required course, especially in medical school?
  - Histology, anatomy, pharmacology
  - “New curriculum” team-taught combined approach.
  - Does your work have “clinical relevance” to a 21-year-old first-year medical student?
- Write/think/plan/self-promote well enough to become **fully funded** from external sources within a couple of years and stay that way?



# **SCIENTIFIC CAREERS IN FOR-PROFIT SETTINGS**

**Biotech  
Big Pharma  
Agribusiness**



# Scientific Research in a Company

---

## ● Good News

- Teamwork
- Fewer pressures to publish
- Planned approach
- No budget problems
- Access to new methodology
- Stock options, salary

## ● Bad News

- Shared science
- Can't publish the hot stuff
- More paperwork
- Deadlines
- Ultimate control by non-scientists
- No students, fellows



# What A Company Hopes to Find

---

- **TEAM PLAYER**
- **Reliable**
- **On-time performance**
- **Good “people skills”**
- **Smart, self-correcting**
- **Able to accept criticism and make corrections**
- **Future potential**
- **Excellent scientific capabilities**



# Research Distinctions Between Early-stage and Late-stage Companies

---

- **Early-stage (e.g., startup biotech)**
  - Much can be published, presented at meetings
  - Latitude to pick the direction and approach
  - Work much like an academic lab
  - You will multi-task
- **Late-stage (e.g., big pharma, big biotech)**
  - Key work is private, only off-hours science is cleared for public
  - Direction according to team needs and planning
  - Stratified levels of authority like Gov't.
  - Keep eye on the ball



# Homework Before You Visit

---

- **Corporate Website**
  - **Corporate Mission:** How do they plan to make money?
  - **Scientific Mission:** What is their technology base?
    - ...Is it unique?
    - ...Is it proprietary?
  - **Scientific Founders**
  - **Scientific Advisory Board Membership**
  - **Corporate Board Membership**
  - **Patent Estate**
- **S.E.C. 10K Form**
  - **Significant matters, compensation of senior management, investors, equity partners**





# **The Job Interview Day: Doctoral Level**

---

- **No more than a day, maybe a half**
- **Seminar in biotech, maybe not in Big Pharma**
- **You may be taking someone else's job**
  - They may not know it
  - They may interview you
- **You will meet people on all levels**
- **You'll be done before 5 pm**
  - Exit interview with HR person
  - No entertainment likely
  - No fraternity rush
- **They will collect opinions, usually in writing**



# Composition of the Search Committee

---

- Your direct supervisor
- Junior hotshot most familiar with current research in your area
- Other team members with whom you will work
- Some junior people, especially if they are known to be good interviewers
- Human Resources person who guides the process



# The Search Committee will be asking themselves “Can this person....”

---

- **IN ACADEMICS**

- **Compete in science** in your chosen field
- **Anchor a key technology** and/or run a core facility
- **Teach a course**, especially an entry-level requirement
- **Self-promote** to attract attention, fellows and grants
- **Publish** often and well
- **Become fully funded** and stay that way?

- **IN A BUSINESS**

- **Know a competitive scientific field**
- **Anchor a key technology** and/or run a process
- **Communicate effectively** by both oral and written means
- **Get along** in a team environment
- Plan and **meet timelines**
- Do work that makes **money for shareholders**



# The Job Interview

---

- **Scientific**
  - Are you well-versed in your field?
  - Can you discuss the type of work they want you to do?
  - Are you familiar with their published work?
  - Are you familiar with the mechanism of action of their drugs or technology?
- **Corporate**
  - Are you under/over-qualified?
  - Will you be likely to stay?
  - Are you a team player?
  - Do you look like one of “them?”



# Do's and Don't

---

- **DO** ask about their published work
- **DO** be sure that you meet your direct supervisor
- **DO** ask about your opportunities for advancement
- **DON'T** ask about their non-public work
  - They will not tell you how far along they are
  - They won't discuss proprietary methods or models
  - Their discussions may seem rather vague compared to discussions in academics
- **DON'T** expect them to keep the job open while you finish up your work
- **DON'T** expect to nit-pick over the size of your office, amount of lab space, etc... that only works in academics



# What They Don't Particularly Care About

---

- **Your willingness to stay forever at their company**
  - People move frequently, giving only two weeks' notice
- **Your outside life**
  - Few will deal with your needs for flexible working time
  - All will deal with staggered start-stop time
- **Your other business dealings**
  - You are paid full-time; you cannot have dealings with competitors
- **Your other scientific interests**
  - You can work on stuff after hours; rarely do they want to even know about it.
  - You **CANNOT** bring or send out clones, reagents, protocols from any outside source... especially ones you made before.



# The Job Offer

---

- It will come from the Human Resources people, not from your supervisor
- It may come at the end of the day, but usually by FEDEX within a day or two.
- There will be a description of your reporting, your salary, stock options
- There will be a drop-dead date; it can be slightly extended but not for long.
- Clarify any uncertainties: relocation payments, bonus (rare) or anything else



# Welcome to MicroPanDNALogix

---

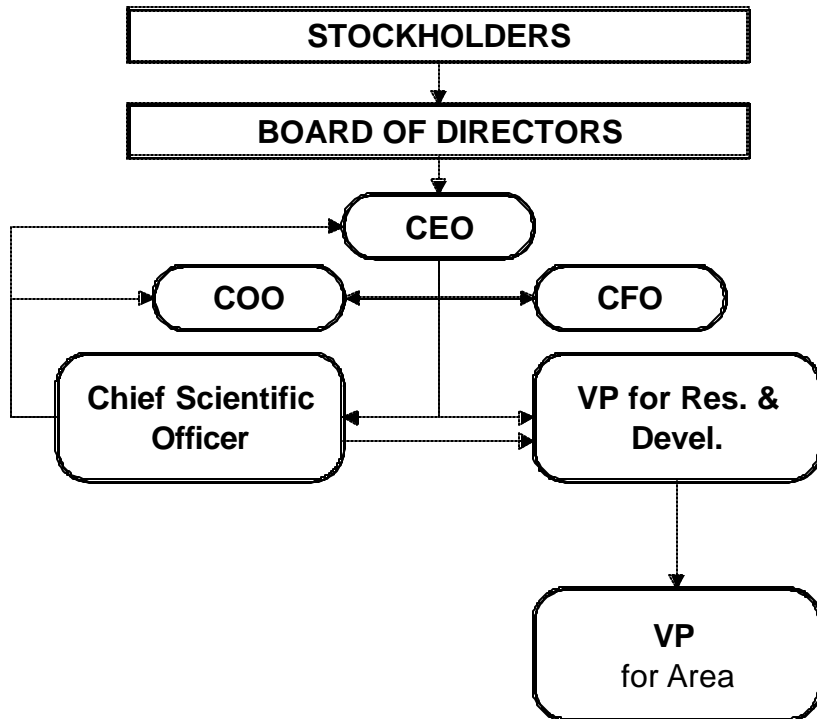
**YOU ARE HERE**

**Staff Scientist**  
One Assistant



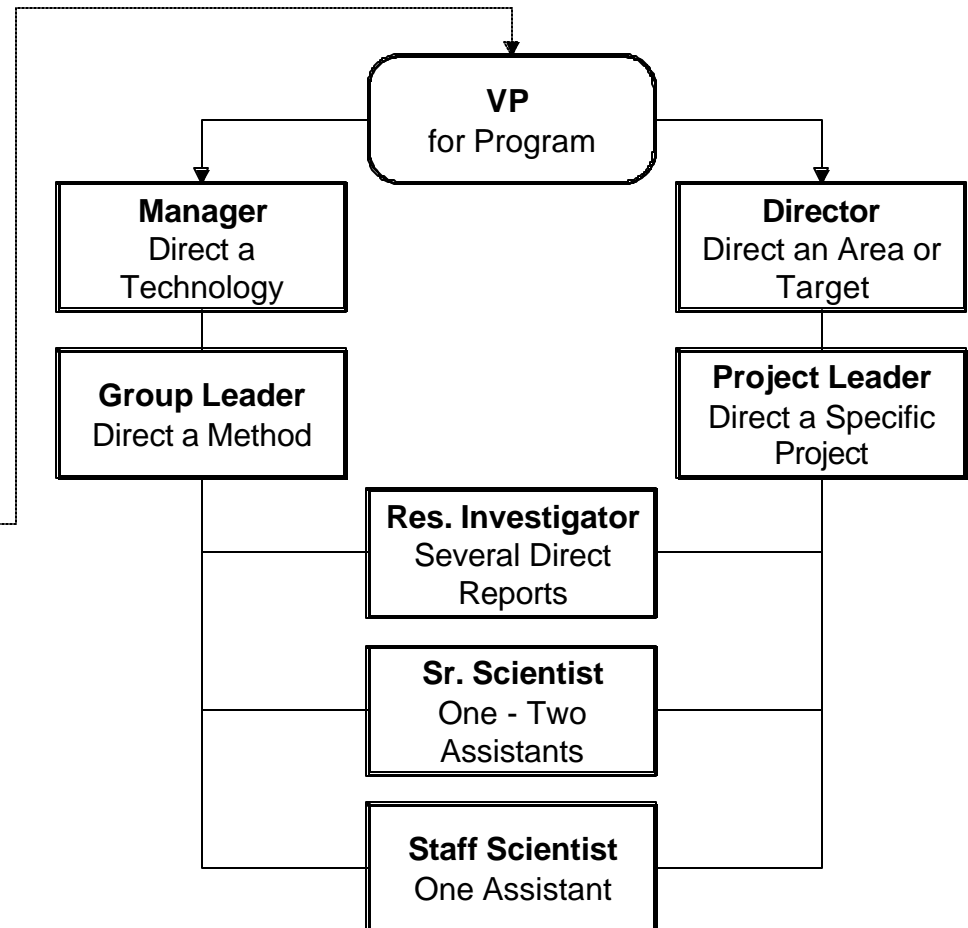


# The Corporate Org Chart



## *The Strategic Team*

## *The Operations Team*





# The Chain of Authority

---

- The general's wife had a bad night
- In the morning, she was still upset and she burned his toast
- The dog chewed up the sports section
- He went to the post, and chewed out his aide
- Who sent the entire brigade on a forced march
- The Sergeant had been hoping for an easy day, due to his bad hangover
- He was so upset he made the private scrub the barracks steps with a toothbrush
- The private was so angry about the useless work that he kicked the platoon's dog
- Who barked



# MORAL OF THE STORY

---

## YOU ARE THE DOG

**HINT: If you want to know what  
work in a company is really like,  
read “DILBERT”  
.... It is very real**